

REMARKS

The Office Action in the present case was mailed on July 13, 2006, making a response due on or before October 13, 2006. This response is being submitted, along with a Petition For Extension of Time Within the Second Month, and the required extension fee. No further fee is thought to be due at this time. If any additional fee is due for the continued prosecution of this application, please charge the same to Applicant's Deposit Account No. 50-2555 (Whitaker, Chalk, Swindle & Sawyer, LLP).

Claims 1-4 were pending in the application. The Examiner has repeated the previous rejection of the pending claims over the Corbett, Jr. '309, Corbett, Jr. '886 and Doolittle '660 references, previously cited, under 35 U.S.C. Section 103(a), but has now added the newly cited reference to Ohasi (U.S. Patent No. 4, 919,297). To very briefly summarize the argument, the Examiner argues that the Corbett, Jr. references show the basic steps in installing a gasket in a socket end of a thermoplastic pipe which is used to form a pipe coupling. The Doolittle '660 reference is cited for the position that both Teflon and polyurethane coatings are used as anti-friction coatings (Office Action, page 4). The Examiner then cited Ohasi ('297) as teaching that it is well known that nitrile rubber (NBR) and polyurethane are equivalent materials in providing similar oil resistance. The Examiner argues that it would have therefore been "obvious" to provide the polyurethane coating of Doolittle as an equivalent to the Teflon coating taught in the Corbett, Jr. existing patents.

Applicant has amended remaining independent Claim 1 to more specifically describe the invention of installing a gasket in a socket end of a thermoplastic pipe which is used to form a pipe coupling, wherein the gasket is "formed of styrene butadiene rubber" and as "having the entire outer working surface thereof coated with an external polyurethane anti-corrosion and anti-friction coating which is able to withstand temperature, chemical attack and abrasion." The final clause of the claim further describes the coating as being "effective to provide oil resistance which is at least that of nitrile rubber at a fraction of the cost of a nitrile rubber gasket, thereby allowing a less expensive material to be used in a product with characteristics equivalent to a more expensive material."

There are at least three separate aspects of Applicant's invention that are described in the remaining claim language that would not be "obvious" from even a combination of the art cited by the Examiner. Applicant has, first of all, found a commercial polyurethane coating (described at length in the Specification as originally filed) which has the frictional properties which would allow it to be used in a plastic pipe belling operation. There may be many types of coatings which can be

utilized to improve the weathering, ozone resistance, and oil resistance properties of rubber compounds. However, many of these coatings may be sticky, or break down under heat and pressures of the type which would be encountered in a pipe belling operation.

Secondly, Applicant has found a coating material which provides acceptable resistance to the problem of environmental degradation of the sealing gaskets used in plastic pipe systems, such as water and sewer pipes used in the municipal water works industries. The gaskets which are used as the sealing elements in such systems are subjected to attack by any of a number of environmental contaminants. These include, oil and hydrocarbons, sunlight, ozone, chemicals, etc. In order to ensure the sealing integrity of such systems, it is necessary to certify that the gaskets in question meet, for example, oil resistance standards as set out in ASTM C361, which Applicant's gaskets have been shown to meet.

Finally, Applicant has provided the solution to the above two aspects of the problem, while at the same time, providing a gasket which can be produced economically and sold competitively in the marketplace. In the prior art, the ASTM standard has generally been met by providing a sealing gasket formed of a material which is itself resistant to oil and other environmental contaminants. This provides a satisfactory solution to the problem, but has the disadvantage that the more exotic rubber formulations, such as nitrile rubber, are more expensive.

Applicant's amended claim language now describes the less expensive starting material which is used as the base material for the gasket. The base material then has "the entire outer working surface thereof coated with an external polyurethane anti-corrosion and anti-friction coating which is able to withstand temperature, chemical attack and abrasion."

The presently defined invention would not be obvious from the combination of art cited by the Examiner for several reasons. The issued Corbett, Jr. patents only teach the pipe belling process and the use of a Teflon coating. They do not address feature of the invention of using a less expensive starting base rubber and coating it with a coating which provides the improved performance characteristics. Doolittle teaches at Col. 4, lines 5-10 that ropes or webbing can be coated with "an anti-friction material such as a slippery polymer like polyurethane, nylon or a chlorinated tetrafluoroethylene polymer..." However, Doolittle nowhere suggests that such a coating would be acceptable for use in a pipe belling operation of the type described in Applicant's Specification.

The Examiner then argues, however, that it would be obvious to make such a substitution because

the Ohasi ('297) reference teaches that nitrile rubber and polyurethane are equivalent materials in terms of oil resistance. However, the Examiner's argument again only goes to one point of Applicant's claimed invention, that of providing adequate environmental resistance for the gasket to prevent undue weathering or degradation in the presence of oil, etc. Nothing in Ohasi points toward the other aspect of Applicant invention, namely that the coating which is selected is acceptable in terms of use in a pipe belling operation.

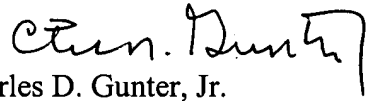
The pipe belling operation described at length in Applicant's original Specification involves a great deal of heat and pressure to force the heated PVC pipe end over the belling mandrel and over the gasket which is pre-located on the mandrel in the "Reiber" style belling process commonly used in the industry. It is often necessary to prelubricate the gasket and mandrel to assure that the gasket can be properly "belled over" during the manufacturing process. The wrong type coating on the gasket would likely result in undue belling forces being exerted which would stress or rupture the pipe end. Similarly, even if the belling operation were accomplished successfully, the belled pipe end might fail in field assembly if the gasket which was installed caused undue friction, and thus undue insertion force in making up the ultimate pipe joint.

The Ohasi ('297) reference fails to fill in this gap in the teaching of the prior art. The Ohasi reference does not deal with sealing gaskets of the type used in plastic pipe sealing operations. The Ohasi teaching is directed to a "seal member" for a fuel injection port of an internal combustion engine (Col. 3, lines 14-15 of Ohasi). Further the Ohasi reference teaches that the entire base material of the seal is formed of nitrile rubber (Col. 3, lines 63-64). He nowhere suggests coating a more crude and less expensive base rubber with an oil resistant coating or the use of such techniques in a pipe manufacturing process, as described above. Even if one accepts the Examiner's position that one skilled in the art would consider nitrile rubber and polyurethane as having equivalent oil resistance, following the Ohasi teaching would lead one to substitute polyurethane as the entire material for forming the gasket body, rather than merely coating the gasket body with a coating, which teaching would not work at all for Applicant's intended purpose.

Based upon the above arguments and amendments, remaining Claims 1-3 are thought to be allowable over the art of record, and an early notification of the same would be appreciated.

Respectfully submitted,

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